

# 1G3GT/1B3GT

## Half-Wave Vacuum Rectifier

### ELECTRICAL

#### Filament, Coated

	Min	Av	Max	
Voltage (AC) . . . . .	1.05	1.25	1.45	V
Current at 1.25 volts . . . . .	-	0.2	-	A
<b>Direct Interelectrode Capacitance</b>				
<b>(Approx.)<sup>a</sup></b>				
Plate to filament & internal shield . . . . .		1.3		pF

### MECHANICAL

Operating Position . . . . .	Any
Maximum Overall Length . . . . .	3-9/16 in
Seated Length . . . . .	2-13/16 ± 3/16 in
Maximum Diameter . . . . .	1-9/32 in
Bulb . . . . .	T9
Cap . . . . .	Small with Tubular Support (JEDEC No. C1-34)

#### Bases (Alternates)

##### Intermediate-Shell Octal:

- 8-Pin (JEDEC Group 1, No. B8-6)
- 7-Pin, Arrangement 2 (JEDEC Group 1, No. B7-166)
- 6-Pin, Arrangement 1 (JEDEC Group 1, No. B6-8)
- 5-Pin, Arrangement 2 (JEDEC Group 1, No. B5-82)

##### Short Intermediate-Shell Octal:

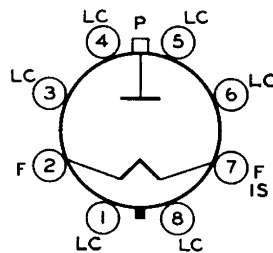
- 7-Pin (JEDEC Group 1, No. B7-47)

##### Short Intermediate-Shell Octal with External Barriers:

- 6-Pin, Arrangement 1 (JEDEC Group 1, No. B6-60)
- 5-Pin, Arrangement 2 (JEDEC Group 1, No. B5-85)

#### Basing Designation for BOTTOM VIEW . . . . . 3C

- Pin 1<sup>b</sup> - Limited Connection<sup>c</sup>
- Pin 2 - Filament
- Pin 3 - Same as Pin 1
- Pin 4<sup>d</sup> - Same as Pin 1
- Pin 5 - Same as Pin 1
- Pin 6<sup>e</sup> - Same as Pin 1
- Pin 7 - Filament, Internal Shield
- Pin 8 - Same as Pin 1
- Cap - Plate



### PULSED-RECTIFIER SERVICE

#### Maximum Ratings, Design-Maximum Values

*For operation in a 525-line, 30-frame system*

#### Inverse Plate Voltage

Total dc and peak <sup>f</sup> . . . . .	26000	V
DC . . . . .	22000	V
Peak Plate Current . . . . .	50	mA
Average Plate Current . . . . .	0.5	mA

#### Characteristics, Instantaneous Value

Tube Voltage Drop for plate mA = 7 . . . . .	100	V
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# 1G3GT/1B3GT

## RADIO-FREQUENCY RECTIFIER SERVICE

### Maximum Ratings, Design-Maximum Values

*For operation in a 525-line, 30-frame system*

Peak Inverse Plate Voltage. . . . .	33000	V
Peak Plate Current. . . . .	35	mA
Average Plate Current . . . . .	1.1	mA
Frequency Range of Supply Voltage . . . . .	1.5 to 100	kc/s

### Characteristics, Instantaneous Value

Tube Voltage Drop for plate mA = 7. . . . .	100	V
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<sup>a</sup> Without external shield.

<sup>b</sup> On the 5-pin bases, pin 1 is omitted.

<sup>c</sup> See *Operating Considerations*.

<sup>d</sup> On the 5-pin bases, the 6-pin bases, and the 7-pin base JEDEC No. B7-166, pin 4 is omitted.

<sup>e</sup> On the 5-pin bases, the 6-pin bases, and the 7-pin base JEDEC No. B7-47, pin 6 is omitted.

<sup>f</sup> This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

## OPERATING CONSIDERATIONS

**Socket Connections.** Socket terminals 1, 3, 4, 5, 6, and 8 may be connected to socket terminal 7 or to a corona shield which is connected to socket terminal 7. Socket terminals 4 and 6 may be used as tie points for components at or near filament potential. Otherwise, do not use.

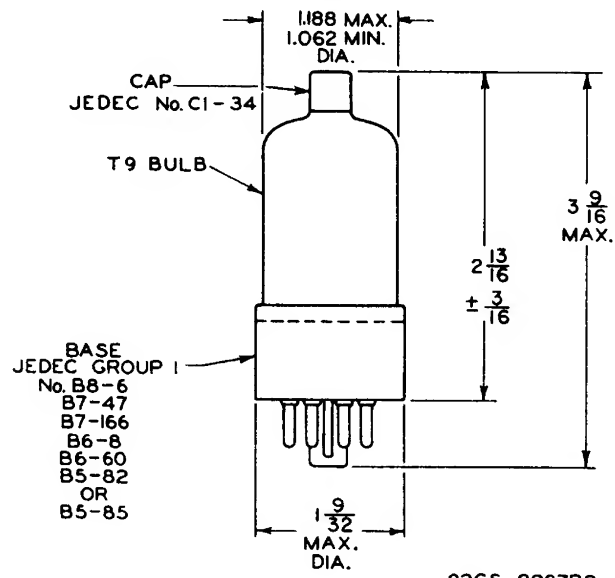
**Measurement of Filament Voltage.** To measure the filament voltage when the filament is at a high dc potential with respect to ground, it is recommended that a simple method utilizing visual comparison of the filament temperature be used. The color temperature of the filament, operating from a pulse- or rf-power source, may be checked by observing in a darkened room the reflection of the incandescent filament upon the surface of the internal shield. A visual comparison of this color temperature with that obtained when the filament of another 1G3GT/1B3GT is operated from a dc or low-frequency ac supply of 1.25 volts, provides a convenient means for adjusting the amount of excitation to produce 1.25 volts (rms) at the filament terminals.

The high voltages at which the 1G3GT/1B3GT is operated are very dangerous. Great care should be taken in the design of apparatus to prevent the operator from coming in contact with these high voltages. Particular care against fatal shock should be taken in the measurement of filament voltage. Under all circumstances, circuit parts which may be at high potentials should be enclosed or adequately insulated.

**X-Radiation.** The voltages employed in some television receivers and other high-voltage equipment are sufficiently high that high-voltage rectifier tubes may produce *X-radiation* which can constitute a health hazard unless such tubes are adequately shielded. Relatively simple shielding should prove adequate, but the need for this precaution should be considered in equipment design.

# 1G3GT/1B3GT

## DIMENSIONAL OUTLINE



DIMENSIONS IN INCHES



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